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Ans

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/389,841	09/03/1999	LARS G. SVENSSON	18036-12	5947

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EXAMINER

TRAN, HENRY N

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 12/31/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/389,841

Applicant(s)

SVENSSON ET AL.

Examiner

HENRY N TRAN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35, 54, 55 and 58-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35, 54, 55 and 58-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 6, 11, 17. 6) ☐ Other: _____

DETAILED ACTION

This Office action is in response to the applicant's amendment received 10/01/03 (Paper No. 16). The amendments to the specification and the claims have been entered. Claims 1-35, 54-55 and 58-61 are pending in this application. Applicant's remarks were considered, with the results set forth as following.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 10/1/03 includes a list of documents, which are duplicates of the IDSs submitted on 3/14/00, 12/5/00 and 1/17/03 (Paper Nos. 4, 6 and 11), and have been considered by the examiner in said papers.

Claim Objections

2. Claim 26 is objected to because of the following informalities: An editorial error has been found on line 4 of claim 26. "switch ing" should be changed to "switching". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 1-35, 54-55 and 58-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumi et al (U.S. Patent No. 6,169,523; hereinafter referred to as "Sumi") in view of Erhart et al (Late-New Paper: Charge-Conservation Implementation in an Ultra Low Power AMLCD Column Drive Utilizing Pixel Inversion, In SID '97 Digest, 1997, Pages 23-26; hereinafter referred to as "Erhart").

5. Regarding to claim 25, Sumi teaches a display apparatus and method for driving the display apparatus which conserve electric power, the display driving circuit comprising: a data voltage connection system 13 (a Drain driver circuit 13) for providing voltage data to column lines 18 from a voltage source; a recovery system 24(a level modulation circuit 24) for modulating voltages of parasitic capacitances (which is read on "other capacitances") associated with the column lines 18; and a control system 14 for controlling the voltage connection system 13 and the recovery system 42 for connecting to the column lines 18 during a first half time period for providing voltage data to column lines 18, and for refreshing the residual potential on the drain lines 18 during a second half time period (see figures 1 and 8; col. 3, 23-36; and col. 8, lines 23-32). However Sumi does not teach expressly the use of a reservoir connected to the recovery connection system during the second time period. Erhart teaches the technique for recovering the charge energy of the column lines using a capacitance reservoir C_{store} for recovering the charge energy during the second time period (see figure 1, page 24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the reservoir as taught by Erhart in the Sumi device for producing the claimed invention because this would provide an improved AMLCD capable of reducing power consumption, and lengthening the lifetime of the power supply. By this rationale, claim 25 is rejected.

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6. Regarding claims 26-35, Sumi further teaches a first electrical switch, which is a MOSFET transistor 22, a comparator circuit 41 (see figure 8). Erhart further teaches a second switch, a ram signal (see figure 2), the second time period begins after the first time period (see the references recited above). Although, Sumi and Erhart do not disclose the use of a stair case, or half-wave sine pulse signals; these signals, however, are well-known voltage signals used for providing voltage data to the column lines in an AMLCD. Claims 26-35 are dependent upon base claim 25, and are rejected on the same reasons set forth in claim 25 and by the reasons discussed above.

7. Regarding claims 1-24, 54-55 and 58-61, which are process or method claims corresponding the apparatus claims 25-35, and are rejected on the same basis set forth in the apparatus claims 25-35.

Response to Arguments

8. Applicant's arguments see pages 11-17 of the amendment, with respect to the prior rejections recited in the prior Office action have been fully considered and are persuasive. The rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made as discussed above.

9. With regarding to the claim terms, applicants' definitions provided in pages 12-17 of the amendment have been noted by the examiner.

10. With regarding to the IDS papers, the examiner has considered the listed documents.

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Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY N. TRAN whose telephone number is 703-308-8410.

The examiner can normally be reached on Mon – Fri from 8:00AM – 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD A. HJERPE, can be reached at 703-305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or fax to:

703-872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

Henry N. Tran

HENRY N. TRAN
Examiner
Art Unit 2674

Hnt
December 28, 2003